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### **REMARKS**

Claims 10, 13, 16, 17, 23, 25, 26, 28, 30, 32, and 34 are amended, no claims are canceled or added; as a result, claims 10 - 41 remain pending in this application.

The above amendments to the claims are made for clarification and are not believed narrowing. Accordingly, the claims remain entitled to a full scope of equivalents.

### **§103 Rejection of the Claims**

Claims 10-41 were rejected under 35 USC § 103(a) as being unpatentable over Applicant's Admitted Prior Art in view of Grubbisich et al. (U.S. 5,698,459). Applicant respectfully traverses. Applicant further incorporates the prior response by reference to preserve all issues for appeal.

Applicant points to the fact that Fig. 2 of the present application does not show the implant area labeled LOCAL IMPLANT as recited in the claims. Fig. 2 of the present application only shows a LOCAL IMPLANT that has an area the same size (horizontal width) as the emitter.

Claim 10 recites, in part, "the implant area having an effective surface area greater than the surface area of the emitter and less than the surface area of the base region." Applicant can not find this feature in either AAPA or Grubisich. As all of the features of claim 10 are not found in AAPA or Grubisich, applicant requests that claim 10 and claims 11-12 be allowed.

Applicant submits that claims 13-33 are allowable for at least substantially similar reasons as stated above with regard to claim 10.

Claim 17 further distinguishes over the applied references, AAPA and Grubisich, in that it recites a second implant region formed in the collector region. Applicant can not find this feature in the applied prior art. Reconsideration and allowance of claim 17 is requested.

The Office Action continues at page 5 "in response to the applicant's argument that Fig. 2 of the present application does not show the implant area labeled LOCAL IMPLANT, the examiner notes that there is, in fact, an area labeled LOCAL IMPLANT at the front end of the arrows shown in the figure." Applicant agrees with this basic observation. However, this was not the applicant's argument. The prior response stated that Fig. 2 of the present application

does not show the implant area labeled LOCAL IMPLANT *as recited in the claims* [italics added]. Claim 10 recites “the implant area having an effective top surface area greater than the surface area of the emitter and less than the surface area of the base region.” This is the clear difference over Fig. 2 of the present application.

The Office Action continues “furthermore, this area does not have the same area as emitter.” The specification states that “by using a local implant through the emitter to increase collector doping *below the emitter only* [italics added]. Thus, the one of skill in the art would understand upon reading the written disclosure and Fig. 2 as a whole that the local implant has the same surface area as the emitter. The examiner then goes on to assert a measurement comparison of the difference in width from the top to bottom between the LOCAL IMPLANT and the emitter. First, top to bottom “width” is commonly referred to as depth, which will be the term used herein when referring to this dimension. Second, the examiner has not accurately calculated the area, which is the depth versus length, of either the LOCAL IMPLANT or the emitter. Specifically, the emitter has side (vertical) dimensions, i.e., depth, that are different than the LOCAL IMPLANT. There is no discussion in the Office Action referring to calculation of area for these different shapes. Applicant requests that examiner provide the basis for taking measurements of Fig. 2, the equations used to calculate the area, and how corrections for the different shapes are being made.

Even more importantly, there is no basis for the examiner to make these calculations. The present written description defines surface areas as planes essentially parallel to the top surface of the wafer, see page 4, lines 21-23. Accordingly, applicant believes that Figure 2 does not show an effective top surface area, an implant top surface area, a top area of the collector region as recited in the independent claims. This is based on the fact that Fig. 2 does not show a top surface area as defined in the application.

The Office Action relies on inherency to read a second implant region into the claims. The office Action does not specifically identify which claims are rejected under the inherency argument. Applicant traverses any inherency argument and requests a reference in support of such a reading.

Applicant respectfully disagrees because the Office Action has not established a *prima facie* case of inherency because, as recited in MPEP § 2112, “In relying upon the theory of inherency, the examiner must provide basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art,” citing Ex parte Levy, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990) (emphasis in original).

The Office Action only argued that Fig. 2 of the present application inherently includes a sub-region. Thus, the Office Action does not even assert that the allegedly inherent characteristic is necessary, let alone provide a basis in fact and/or technical reasoning. Applicant respectfully submits that the claimed second implant as recited in claims does not necessarily flow from Fig. 2 as it does not show a second implant region as recited in claims 17-24 and 34-37.

To serve as an anticipation when a reference is silent about the asserted inherent characteristic, the gap in the reference may be filled with recourse to extrinsic evidence. But, such evidence must make clear that “the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill.” *Continental Can Co. v. Monsanto Co.*, 20 USPQ2d 1746, 1749 (Fed. Cir. 1991). Applicant respectfully submits that the Examiner has not produced extrinsic evidence to show that the feature of a second implant recited in claims 17-24 and 34-37 is necessarily present in Fig. 2 of the present application.

Withdrawal of the rejection of claims 10-37 is respectfully requested.

Referring to claim 20, it recites, wherein the second implant region is formed in the plug at about the same level from the surface of the substrate as the first implant region. Applicant can not find this feature in AIPA Fig. 2 or Gruibisch et al. Applicant further points to the fact that Fig. 2 of the present application does not show a second implant region in the middle of the plug. Fig. 2 of the present application only shows a plug labeled N+ COLL TAP. Moreover, Fig. 2 does not show a second implant in the middle of the plug that has is wider than the plug. Withdrawal of this rejection of claim 20 is requested. In the alternative, clarification of this rejection is requested for appeal.

Referring to claim 24, it recites, wherein the second implant region has a surface area greater than the area of an opening through which the second implant region is formed. Applicant can not find this feature in AAPA Fig. 2 or Grubbisich et al. Withdrawal of this rejection of claim 20 is requested. In the alternative, clarification of this rejection is requested for appeal.

Referring to claims 38 and 41, applicant further traverses the obviousness rejection. Claim 38 recites, in part, means for minimizing carrier injection from the periphery of the emitter region to the collector region at high current operation of the transistor. Claim 41 recites, in part, means for minimizing base-collector capacitance and maximizing high current operation. Accordingly, claims 38 and 41 are means-plus-function claims under 35 U.S.C. § 112, paragraph 6. MPEP 2183 requires the Examiner to make a *prima facie* case of equivalence under 35 U.S.C. 112, paragraph 6. However, the Examiner has not presented an explanation or a rationale as to why Applicant's Admitted Prior Art and Grubbisich et al. are equivalent to the corresponding elements disclosed in the specification as is required by the MPEP 2183. The applicant respectfully submits that Applicant's Admitted Prior Art and Grubbisich et al., either alone or in combination, do not disclose an equivalent to the corresponding elements disclosed in the specification under 35 U.S.C. 112, paragraph 6. Reconsideration and allowance of claims 38 and 41 along with all claims depending therefrom are respectfully requested.

#### **Response to the Conclusion Section**

The Office Action states that it is made final based on the Applicant's prior amendment necessitating new grounds of rejection that are presented in the Office Action. Applicant requests clarification as to the new grounds for rejection. The rejection of the claims appears on its face to be the same rejection as in the prior Office Action, namely, AAPA Fig.2 in view of Grubbisich et al. (U.S. 5,698,459).

**Telephone Interview Request**

The undersigned requests a telephone interview if the rejections in the prior Office Action are not withdrawn. The undersigned's telephone number is (612) 349-9587.

AMENDMENT AND RESPONSE UNDER 37 CFR § 1.116 – EXPEDITED PROCEDURE

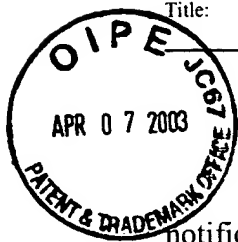
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CONCLUSION

Applicant respectfully submits that the claims are in condition for allowance and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney 612-349-9587 to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

Respectfully submitted,

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By his Representatives,

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Date

31 March 2003

By

Timothy B Clise

Reg. No. 40,957

CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to: Box AF, Commissioner of Patents, Washington, D.C. 20231, on this 31st day of March, 2003.

Name

Tina Kohart

Signature

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